ren_	Leu	Leu	Leu	Leu	
			Ser		15
			Ten		
			Leu		
			Phe		
Leu	Leu	Leu	Leu	Tyr	
			Thr		10
Thr	Thr	\mathtt{Thr}	\mathtt{Thr}	Met	
Gln	Gln	Gln	Gln	Gln	
Leu	Leu	Leu	Len	Arg	
Leu	Leu	Len	Leu	Leu	
Ser	Ser	Ser	Ser	Val	5
Gln	Gln	Gln	Gln	Gln	
Pro	Pro	Pro	Pro	Val	
Thr	Thr	Thr	\mathtt{Thr}	Ala	
Met	Met	Met	Met	Met	\leftarrow
luman GPR56-1:	luman GPR56-2:	luman GPR56-3:	luman GPR56-4:	Jurine GPR56:	
Humar	Humar	Humar	Humar	Murir	

Gly His Arg Glu Asp Phe Ser Pro Arg Glu Asp Phe	30
Gly Arg (Gly Arg (Gly Arg (Gly Arg (Gly Arg (Sly	7.5
His His His His	
Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala	
G1Y G1Y G1Y G1Y G1Y	
Gln Gln Gln Gln	
Val Val Val	70
Leu Leu Leu Leu	
Phe Phe Phe Phe	
Leu Leu Leu Leu	
<pre>luman GPR56-1: luman GPR56-2: luman GPR56-3: luman GPR56-4: furine GPR56:</pre>	
Human Human Human Human Murine	

His	His	His	u His Tyr	His	
			Ser Leu	Thr Le	45
Ser	Ser	Ser	Ser	Ser	
Arg	Arg	Arg	Arg	Gln	
His	His	His	His	Gln	
			\mathtt{Thr}		
				Gln	40
			Asn		
			Arg		
			Gln		
			Ser		
				Cys	35
			Phe		
Arg	Arg	Arg	Arg	Arg	
Human GPR56-1:	Human GPR56-2:	Human GPR56-3:	Human GPR56-4:	Murine GPR56:	

Ala	Ala	Ala	Ala	Thr	
Glu	Glu	Glu	. Glu Glu	Glu	
Glu	Glu	Glu	Glu	Glu	
Ser	Ser	Ser	Ser	e Val Trp Asn Thr G	
Asn	Asn	Asn	Asn	Asn	09
Glu	Glu	Glu	Glu	Trp	
Ile	Ile	Ile	Ile	Val	
Se	Se	Se	Se	Ph	
Ile	Ile	Ile	Ile	Ile	
Arg	Arg	Arg	Arg Ile	His	55
Leu	Leu	Leu	Asp Leu	Pro	
Asp	Asp	Asp	Asp	GIn	
Pro	Pro	Pro	Thr Pro	Ser	
\mathtt{Thr}	\mathtt{Thr}	\mathtt{Thr}	\mathtt{Thr}	Ser	
Pro	Pro	Pro	Pro	Gln	20
Lys	Lys	Lys	Lys	Asp	
Human GPR56-1:	Human GPR56-2:	Human GPR56-3:	Human GPR56-4:	<pre>durine GPR56:</pre>	
Humar	Humar	Humar	Humar	Murin	

FIGURE 1a

1

Thr Val His Ala Pro Phe Pro Ala Ala His Pro Ala Ser Arg Ser Thr Val His Ala Pro Phe Pro Ala Ala His Pro Ala Ser Arg Ser Thr Val His Ala Pro Phe Pro Ala Ala His Pro Ala Ser Arg Ser Thr Val His Ala Pro Phe Pro Ala Ala His Pro Ala Ser Arg Ser Thr Val His Ala Pro Phe Ieu Ala Ala Ala Pro Asp Ile Pro Arg Phe Thr Ile Arg Ala Pro Phe Ieu Ala Ala Ala Pro Asp Ile Pro Arg Phe 70	Pro Asp Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Argero Asp Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Argero Asp Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Argero Asp Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Argero Glu Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Argero Glu Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Ser Argero Glu Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Ser Argero Glu Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Ser Argero Glu Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Ser Argero Glu Pro Argero Glu Pro Argero Glu Pro Tyr His Phe Cys Leu Tyr Trp Ser Argero Glu Pro Glu Pro Argero Glu Pro Glu Pro Glu Pro Argero Glu Pro G	Ala Gly Arg Leu His Leu Leu Tyr Gly Lys Arg Asp Phe Leu Leu Ala Gly Arg Leu His Leu Leu Tyr Gly Lys Arg Asp Phe Leu Leu La Gly Arg Leu His Leu Leu Tyr Gly Lys Arg Asp Phe Leu Leu Ala Gly Arg Leu His Leu Leu Tyr Gly Lys Arg Asp Phe Leu Leu Leu Thr Gly Lys His Asp Phe Leu Leu Leu Inc	Asp Lys Ala Ser Ser Leu Leu Cys Phe Gln His Gln Glu Glu Ser Asp Lys Ala Ser Ser Leu Leu Cys Phe Gln His Gln Glu Glu Ser Asp Lys Ala Ser Ser Leu Leu Cys Phe Gln His Gln Glu Glu Ser Asp. Lys Ala Ser Ser Leu Leu Cys Phe Gln His Gln Glu Glu Ser Ser Gln Ala Ser Arg Leu Leu Cys Phe Gln Lys Gln Glu Glu Ser 115
Leu Thr Leu Thr Leu Thr Leu Thr Leu Thr	Phe Pro Phe Pro Phe Pro Phe Pro	His Ala His Ala His Ala His Ala	Ser Asp Ser Asp Ser Asp Ser Asp.
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

FIGURE 1k

His His His

Lys Lys Lys Lys

Phe Leu
Phe Leu
Phe Leu
Tyr Leu
190

Gln Gln Gln

> Leu Leu Leu

Ser

Leu

Leu

Ser Ser Ser

Gln Leu I Gln Leu I Gln **Gln** 1

Leu Leu Leu

Asp Asp Asp **Glu**

Lys Arg Lys Arg Lys Arg Lys Arg Lys Lys Lys 180

Glu Leu Glu Leu Glu Leu Asp Leu

Cys Cys Cys Cys

Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

Trp Trp Trp Trp	Ser Ser Ser 160	M M M M M M M M M M M M M M M M M M M	His
Trp Trp Trp Trp	Phe Phe Phe Phe Phe	Asp Asp Asp Asp Asp Asp	Lys
S S O E R S O	Thr Thr Thr Thr	Val Val Val Val	Leu
Thr Thr Thr Thr	Phe Phe Phe Phe	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Phe
Val Val Val Val 140	X X X X X X X X X X X X X X X X X X X	Ala Ala Ala Ala Ala	Gln
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ala Ala Ala Ala 155	Asn Asn Asn Asn Asn	Ser
Thr Thr Thr Thr	Ala Ala Ala Ala Ala	His His His His	Leu
Ala Ala Ala Ala Ala	Ser Ser Ser Ser	Ala Ala Ala Ser	Leu
Leu Leu Leu Leu	Pro Pro Pro Pro	Ala Ala Ala Val	Gln
Leu Leu Leu Leu Leu 135	Leu Leu Leu Leu	Thr Thr Thr Thr	Leu
Pro Pro Pro Pro	Ser Ser Ser Ser 150	His His His His	Asp
Pro Pro Pro Pro	1116 1116 1116 11 16	Pro Pro Pro Pro	Arg
G1Y G1Y G1Y G1Y G1Y	Asn Asn Asn Asn Asn	Pro Pro Pro Pro	Lys
Gln Gln Gln Gln	Gln Gln Gln Gln	Ser Ser Ser	Leu
Ala Ala Ala Ala Ala Lys	Pro Pro Pro Pro	His His His His	Glu
Leu Leu Leu Leu	Ser Ser Ser Ser 145	Phe Phe Phe Phe Phe	Cys
Human GPR56-1: Human GPR56-3: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1:

FIGURE 1

61u 61u 61u 61u 61u

Gln Gln Gln Gln Lys 255

Arg Arg Arg **Gln**

His His His His

Ile Ile

Leu Leu Leu

Leu Leu Leu

Ser Ser Ser

Ile

His

Gln Asp Leu

Ala Ala Ala Ala

Pro

Human GPR56-1:

Ser

His His His 250

Gln Asp I Gln Asp I Gln Asp I Glu Asp I

G1Y G1Y G1Y G1Y G1Y

Thr Thr Thr Thr

Gln Gln Gln Gln

Pro Pro Pro Pro

Human GPR56-2:
Human GPR56-3:
Human GPR56-4:
Murine GPR56:

Leu Gln I

	Ω , Ω , Ω , Ω , Ω ,	
Gln Gln Gln Gln	Asp Asp Asp Asp Asp	Leu Leu Leu Leu 240
Gln Gln Gln Gln	G1y G1y G1y G1y G1y	Lys Lys Lys Lys Lys
S S S S S S S S S S S S S S S S S S S	Met Met Met Leu	Trp Trp Trp Trp
Ala Ala Ala Ala 11e 205	Phe Phe Phe Phe	Val Val Val Val
Pro Pro Pro Pro	Arg Arg Arg Arg Ser 220	Thr Thr Thr Thr
Ala Ala Ala Ala Ala	Val Val Val Val	Ala Ala Ala Ala Ala 235
Ala Ala Ala Ala Ala	S S S S S S S S S S S S S S S S S S S	Asn Asn Asn Asn Asn
Ser Ser Ser Ahr	Thr Thr Thr Thr	4 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Pro Pro Pro Pro Pro 200	Leu Leu Leu Leu	Arg Arg Arg Arg
Arg Arg Arg Arg	Lys Lys Lys Lys 215	Asp Asp Asp Asp Asp
Arg Arg Arg Arg Lys	Ser Ser Ser Ser	Glu Glu Glu Glu Glu
Ser Ser Ser Ala	Glu Glu Glu Glu	Glu Glu Glu Glu Glu
Ala Ala Ala Ala Ala	Leu Leu Leu Leu	Phe Phe Phe Phe Phe
Lys Lys Lys Lys Lys 195	Ser Ser Ser	Ser Ser Ser
Gln Gln Gln Gln	Gln Gln Gln Gln Gln	Val Val Val Leu
Pro Pro Pro Pro	Leu Leu Leu Leu	Met Met Met 7225
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

Thr Thr Thr Thr Thr 320

> Asn Asn Asn Asn

Val Val Val

Ile Val
Ile Val
Ile Val
Ile Val
Ile Val
315

61y 61y 61y 61y 61y

 $\begin{array}{c} LYS\\ LYS\\ LYS\\ LYS\\ LYS\\ LYS\\ \end{array}$

61y 61y 61y 61y 61y

Leu Leu Leu Leu

Val Val Val

Ser Ser Ser Ser 305

Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4:

Val

Glu Glu Glu Glu 310

Leu Leu Leu

Leu

Val Val Val

Leu

Val

Ser

Gln Gln Gln Gln

Val

u u u u m t	77777	
Thr Thr Thr Thr	Leu Leu Leu Leu	S O E E E E E E E E E E E E E E E E E E
Arg Arg Arg Arg Arg	Arg Arg Arg Arg Arg	Asn Asn Asn Asn Asn
Pro Pro Pro Pro Pro	$\frac{LYS}{LYS}$ $\frac{LYS}{LYS}$ $\frac{LYS}{LYS}$	$\begin{array}{c} \text{L} \chi \text{s} \\ \text{L} \chi \text{s} \end{array}$
Leu Leu Leu Leu	Glu Glu Glu Glu Ala 285	Asp Asp Asp Asp Asp
Leu Leu Leu Leu	Ala Ala Ala Ala Asp	Gln Gln Gln Gln Gln
Val Val Val Leu	Glu Glu Glu Glu	Phe Phe Phe Phe Phe
S S O E E E E E E E E E E E E E E E E E	G1 <i>y</i> G1 <i>y</i> G1 <i>y</i> G1 <i>y</i>	Leu Leu Leu Leu Leu
7 yr 7 yr 7 yr 7 yr 7 yr 265	Ser Ser Ser Arg	Ala Ala Ala Ala Ala
Glu Glu Glu Glu	Arg Arg Arg Arg Arg Arg	Gln Gln Gln Gln
Met Met Met Gln	G1Y G1Y G1Y G1Y G1Y	Ser Ser Ser 295
116 116 116 116 Val	Lys Lys Lys Lys Arg	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
61u 61u 61u 61u 61u	Thr Thr Thr Thr	Phe Phe Phe Phe
Ser Ser Ser Ser 260	Arg Arg Arg Arg Gln	Asp Asp Asp Asp Asp
Gln Gln Gln Gln	Gln Gln Gln Gln Gln	Val Val Val
61u 61u 61u 61u 61u	Phe Phe Phe Phe Phe	Leu Leu Leu Leu Val
61u 61u 61u 61u 61u	Leu Leu Leu Val	Leu Leu Leu Leu
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

FIGURE 1e

Tyr Tyr Tyr Tyr Tyr

Thr Thr Thr Thr

Leu Leu Leu Leu

His His His His

Cys Cys Cys Cys

Phe Phe Phe Phe

 $\begin{array}{c} C\chi s \\ C\chi$

Thr Thr Thr Thr 375

Gln Gln Gln

Thr Thr Thr Thr

Glu Glu Glu Glu

Arg Arg Arg Arg

Val Val Val Val

Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

Arg Arg Arg Arg Ser

Asn

Asn Asn Asn Asn

Gln Gln Gln Gln	Asp Asp Asp Asp Asp	Thr Thr Thr Thr
His His His His 335	Glu Glu Glu Glu Glu	Glu Glu Glu Glu
Gln Gln Gln Gln	Val Val Val Val 350	$\begin{array}{c} C\gamma s \\ C\gamma s \end{array}$
Phe Phe Phe Phe	1	G1Y G1Y G1Y G1Y G1Y
Thr Thr Thr Thr	Phe Phe Phe Phe	Ala Ala Ala Ala Ala
Leu Leu Leu Leu	Val Val Val Val	X X X X X X X X X X X X X X X X X X X
Val Val Val Val	$\begin{array}{c} Cys \\ Cys \\ Cys \\ Cys \\ Cys \\ Cys \end{array}$	S S O R C S O R C S O R C C C C C C C C C C C C C C C C C C
Val Val Val	Gln Gln Gln Gln Gln	Trp Trp Trp Trp
Pro Pro Pro Pro	Leu Leu Leu Leu Leu	His His His Ker 360
Glu Glu Glu Glu	Thr Thr Thr Thr	G1y G1y G1y G1y G1y
Thr Thr Thr Thr	Val Val Val	Pro Pro Pro Pro
Leu Leu Leu Leu Leu	Asn Asn Asn Asn Asn	00 00 00 00 00 00 00 00 00 00 00 00 00
Asn Asn Asn Asn	Lys Lys Lys Lys Lys 1ys	S O O C C C C C C C C C C C C C C C C C
Ala Ala Ala Ala Thr	Pro Pro Pro Pro	Leu Leu Leu Leu Ser 355
Val Val Val Val	Gln Gln Gln Gln	Thr Thr Thr Thr
$\begin{array}{c} L Y S \\ L Y S \end{array}$	Leu Leu Leu Leu	Pro Pro Pro
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

FIGURE 1f

8 \(\frac{1}{2} \) \(\frac{1} \) \(\frac{1} \) \(\frac{1}{2} \) \(\frac{1}{2} \	Leu Leu Leu Leu	9 9 9 1 1 2 2 1 1
His I His I His I His I His I	Ala I Ala I Ala I Ala I Ala I	P P P P P P P P P P P P P P P P P P P
Val Val Val Thr	S & & R & S & & R & S &	Val Val Val 430
Ala Ala Ala Ala Ala	Val Val Val Ile	Arg Arg Arg Arg Arg
Asp Asp Asp Asp Glu	Val Val Val Val	S S O C C C C C C C C C C C C C C C C C
Val Val Val Val 395	$\begin{array}{c} C\chi_S\\ C\chi_S\\ C\chi_S\\ C\chi_S\\ C\chi_S\\ C\chi_S\\ \end{array}$	$\begin{array}{c} C \times S \\ C \times S \\$
Glu Glu Glu Glu Glu	G1Y G1Y G1Y G1Y G1Y	Leu Leu Leu Leu
Val Val Val Thr	Val Val Val Val	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Ala Ala Ala Ala Ala
X X X X X X X X X X X X X X X X X X X	S S S S S S S S S S S S S S S S S S S	Ala Ala Ala Ala
Val Val Val Val	Leu Leu Leu Leu	6 6 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M M M M M M M M M M M M M M M M M M M	Leu Leu Leu Leu Leu	Thr Thr Thr Thr
Leu Leu Leu Leu	S S S S S S S S S S S S S S S S S S S	Val Val Val Val 420
Val Val Val Val	Leu Leu Leu Leu	Leu Leu Leu Val
Ala Ala Ala Ala	7 Y K 7 Y K 7 Y K 1 Y K 1 Y K 1 Y K	Cys Cys Cys Cys Cys
Phe Phe Phe Phe Phe	His His His His	Ala Ala Ala Ala Ala
GPR56-1: GPR56-2: GPR56-3: GPR56-4: e GPR56:	GPR56-1: GPR56-2: GPR56-3: GPR56-4: e GPR56:	GPR56-1: GPR56-2: GPR56-3: GPR56-4: e GPR56:
GPF GPF GPF GPF	GPF GPF GPF GPF	GPF GPR GPR GPR
Human Human Human Human Murine	Human G Human G Human G Human G Murine	Human Human Human Murine
HC HC HC MC	H H H H H H H H H H H H H H H H H H H	HU HU HU MUI

FIGURE 1g

Asn Asn Asn Asn

His His His

Lys Lys Lys Lys

> Thr Thr Thr Thr

Arg Arg Arg Arg

Lys Lys Lys Lys

Arg Arg Arg Arg Arg

Arg Arg Arg

Cys Cys Cys

Pro Pro

Human GPR56-1:

Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

Asp Asp

ile Ile Ile

Met

Val Val 445

Asp Asp 440

Pro **Ser**

Met Met

His Met

Val Val Val

 Thr

Pro Pro Pro

Asp Thr Ser Phe Leu Leu Ser Glu	Ala Gly Cys Arg Ala Ser Ala Ile	Cys Leu Ser Trp Met Gly Leu Glu	Val Glu Val Phe Gly Thr Tyr Val
Asp Thr Ser Phe Leu Leu Ser Glu	Ala Gly Cys Arg Ala Ser Ala Ile	Cys Leu Ser Trp Met Gly Leu Glu	Val Glu Val Phe Gly Thr Tyr Val
Asp Thr Ser Phe Leu Leu Ser Glu	Ala Gly Cys Arg Ala Ser Ala Ile	Cys Leu Ser Trp Met Gly Leu Glu	Val Glu Val Phe Gly Thr Tyr Val
Asp Thr Ser Phe Leu Leu Ser Glu	Ala Gly Cys Arg Ala Ser Ala Ile	Cys Leu Ser Trp Met Gly Leu Glu	Val Glu Val Phe Gly Thr Tyr Val
Asp Val Ser Phe Leu Leu Ser Glu	Ala Ala Cys Arg Thr Ser Ala Met	Cys Leu Ser Trp Met Gly Leu Glu	Val Glu Val Phe Gly Thr Tyr Val
460	475	490	505
Val Phe Leu Leu	Thr Gly Ser Glu	Ser Leu Leu Thr	Tyr Arg Leu Val
Val Phe Leu Leu	Thr Gly Ser Glu	Ser Leu Leu Thr	Tyr Arg Leu Val
Val Phe Leu Leu	Thr Gly Ser Glu	Ser Leu Leu Thr	Tyr Arg Leu Val
Val Phe Leu Leu	Thr Gly Ser Glu	Ser Leu Leu Thr	Tyr Arg Leu Val
Val Phe Leu Leu	Thr Gly Ser Glu	Ser Leu Leu Ala	Tyr Arg Leu Val
Leu Leu Leu Ala V Leu Leu Leu Ala V Leu Leu Leu Ala V Leu Leu Leu Ala V Leu Leu Ser Ala V	Pro Val Ala Leu T Pro Val Ala Leu T Pro Val Ala Leu T Pro Val Ala Leu T Pro Val Ala Leu T 465	Phe Leu His Phe S Phe Leu His Phe S Phe Leu His Phe S Phe Leu His Phe S Phe Leu His Phe S	Gly Tyr Asn Leu T Gly Tyr Asn Leu T Gly Tyr Asn Leu T Gly Tyr Asn Leu T Gly Tyr Asn Leu T
Human GPR56-1:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1:	Human GPR56-1:
Human GPR56-2:		Human GPR56-2:	Human GPR56-2:
Human GPR56-3:		Human GPR56-3:	Human GPR56-3:
Human GPR56-4:		Human GPR56-4:	Human GPR56-4:
Murine GPR56:		Murine GPR56:	Murine GPR56:

Construction of the Constr

Pro Pro Pro Pro
Phe Phe Phe Phe
G1Y G1Y G1Y G1Y G1Y 525
7
617 617 617 617 617
Met Met Wet
Ala Ala Ala Ala Ile
S S G R S S G R S S G R
Leu Leu Leu Leu
$\begin{array}{c} L V S S \\ L V S S \\ L V S S \end{array}$
Leu Leu Leu Leu
Leu Leu Leu Leu
777 777 777 777 515
617 617 617 617 617
Pro Pro Pro Pro
<pre>luman GPR56-1: luman GPR56-2: luman GPR56-3: luman GPR56-4: durine GPR56:</pre>
Human Human Human Human Murin

0	0	0	0	0	
			Pro		
G1y	Gly	Gly	Gly	Gly	
Tyr	Tyr	Tyr	$\mathtt{T}\mathtt{yr}$	TYr	
Asn	Asn	Asn	Asn '	Asn	
Asp	Asp	Asp	Asp	Asn	540
Val	Val	Val	Val	Val	
Asp	Asp	Asp	Asp	Asp	
Val	Val	Val	Leu Val	Val	
Leu	Leu	Leu	Leu	Leu	
Ala	Ala	Ala	Ala	Ala	535
Val	Val	Val	Val	Val	
			Len		
Thr	\mathtt{Thr}	\mathtt{Thr}	\mathtt{Thr}	Thr	
Val	Val	Val	Val	Val	
			Leu		530
Phe	Phe	Phe	Phe	Phe	
GPR56-1:	GPR56-2:	GPR56-3:	GPR56-4:	e GPR56:	
Human	Human	Human	Human	Murine	

Ser	Ser	Ser	Ser	Ser	260
			Pro		
			Tyr		
Ile	Ile	Ile	Ile	Thr	
Val	Val	Val	Val	Val	
			G1y		555
Glu	Glu	Glu	Glu	Glu	
Pro	Pro	Pro	Pro	Pro	
Thr	Thr	Thr	\mathtt{Thr}	\mathtt{Thr}	
Arg	Arg	Arg	Arg	Arg	
His	His	His	His	Arg	550
Val	Val	Val	Val	Val	
Ala	Ala	Ala	Ala	Ala	
Leu	Leu	Len	Ile Leu	Leu	
Ile	Ile	I1e	Ile	Ile	
Ile	Ile	Ile	Ile	Ile	545
Human GPR56-1:	luman GPR56-2:	luman GPR56-3:	luman GPR56-4:	'R56:	
GPR	GPR	GPR	GPR	e GF	
Human	Human	Human	Human	Murine GPR56	

G1Y G1Y G1Y G1Y G1Y
Leu Leu Leu Leu 575
e Thr Asn Leu Gly 1 Thr Asn Leu Gly 575
Thr Thr Thr Thr
1116 1116 1116 Val
TYr TYr TYr TYr
le Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Ile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Arg Asp Ser Leu Val Ser Tyr Val Tile Tile Tile Tile Tile Tile Tile Til
Val Val Val Val
Leu Leu Leu Leu
S S O F L S O S O F L S O S O F L S O
Asp Asp Asp Asp
Arg Arg Arg Arg Arg
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
$\begin{array}{c} C\gamma s \\ C\gamma s \end{array}$
Met Cys Met Cys Met Cys Met Cys
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:

FIGURE 1i

Met	ب د	t) Ct	e t	a t	
Thr	Ini	Thi	Thi	Thi	
Ala	Ala	Ala	Ala	Ala	590
Leu	ren	Len	Leu	Leu	
Met	Met	Met	Met	Met	
Ala	Ala	Ala	Ala	Ala	
Met	Met	Met	Met	Leu	
Asn	Asn	Asn	Asn	Asn	585
Phe.					
Leu	Len	Len	Leu	Leu	
Phe	Phe	Phe	Phe	Phe	
Val	Val	Val	Val	Val	
Leu	Len	Leu	Leu	Leu	580
Ser	Ser	Ser	Ser	Ser	
Phe	Phe	Phe	Phe	Phe	
Leu	Len	Len	Leu	Len	
Human GPR56-1:	Human GPR56-2:	Human GPR56-3:	Human GPR56-4:	Jurine GPR56:	
Human	Human	Human	Human	Murin	

i.s	His	i.s	1.8	His	
rH	H	r H	H H	E	
Se	Se	Se	Se	Pr	
Trp	s Trp Ser H	Trp	Trp	Trp	
Ĺζ	ĹΣ	Γ <u>γ</u> ε	Ĺζ	ASI	605
Gln	Gln	Gln	Gln	Gln	
Thr	His Thr Gln]	\mathtt{Thr}	Thr	Ser	
His	His	His	His	His	
Pro	Pro	Pro	Pro	Pro	
Arg	Arg	Arg	Arg	Arg	009
Leu	Leu	Len	Leu	Leu	
Arg	Val Val Gln Ile Leu Arg Leu Arg Pro	Arg	Arg	Arg	
Len	Len	Len	Leu	Leu	
Ile	Ile	Ile	Ile	Ile	
Gln	Gln	Gln	Gln	Gln	595
Val	Val	Val	Val	Val	
Val	Val	Val	Val	Val	
Iuman GPR56-1:	GPR56-2:	GPR56-3:	luman GPR56-4:	Murine GPR56:	
เพลก	luman	luman	ıman	ırine	

Ala	Ala	Ala	Ala	Ala	
Trp	Trp	Trp	Trp	Trp	
Pro	Pro	Pro	Pro	Pro	
Leu	Leu	Ten	Len	Leu	620
Gly	Gly	Gly	G1y	G1y	
Leu	Len	Leu	Len	Len	
Val	Val	Val	Leu Leu Gly Leu Ser Leu Val Leu Gly Leu Pro Trp	Val	
Leu	Leu	Leu	Len	Leu	
Ser	Ser	Ser	Ser	Ser	7 5
Leu	Leu	Leu	Len	Leu	
G1y	GLy	G1y	G1y	Gly	
Leu	Leu	Leu	Leu	Leu	
Leu	Leu	Leu	Len	Leu	
Thr	Thr	Thr	Thr	Thr	610
Leu	Leu	Len	Leu	Leu	
Val	Val	Val	Val Leu Thr I	Val	
luman GPR56-1:	luman GPR56-2:	luman GPR56-3:	luman GPR56-4:	furine GPR56:	
Human	Human	Human	Human	Murine	

Human GPR56-1:	Leu	Ile	Phe	Phe	Ser	Phe	Ala	Ser	Gly	\mathtt{Thr}	Phe	Gln	Leu	Val	Val	Leu
Human GPR56-2:	Leu Ile	Ile	Phe Phe	Phe	Ser	Phe	e Ala Ser Gly Thr	Ser	G1y	Thr	r Phe Gln Leu Val Val Leu	Gln	Leu	Val	Val	Leu
Human GPR56-3:	Leu	Ile	Phe	Phe	Ser	Phe	Ala	Ser	Gly	Thr	Phe	Gln	Leu	Val	Val	Leu
Human GPR56-4:	Leu	Ile	Phe	Phe	Ser	Phe	Ala	Ser	G1y	Thr	Phe	Gln	Leu	Val	Val	Leu
Murine GPR56:	Leu	Val	Phe	Phe	Ser	Phe	Ala	Ser	G1y	\mathtt{Thr}	Phe	Gln	Len	Val	Ile	Leu
	625					630					635					640

FIGURE 1

Leu Leu Leu Leu	Thr Thr Thr Thr	
Pro Pro Pro	S S S S S S S S S S S S S S S S S S S	
Ser Ser Ser Ser	617 617 617 617 617	
Pro Pro Pro	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	•
617 617 617 617 617	S S S S S S S S S S S S S S S S S S S	
617 617 617 617 617		
Arg Arg Arg Arg	Pro Pro Pro	
Ala Ala Ala Ala Ala 665	Leu Leu Leu Leu	
Gln Gln Gln Gln	Arg Arg Arg Arg Arg 680	
Leu Leu Leu Leu	Ala Ala Ala Ala Ala	
Arg Arg Arg Arg	CYS Ser Ser Ser	
M M M M M M M M M M M M M M M M M M M	Asp Asp Asp Asp Asp	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
S S B L L S S B L L S S B L L S B B	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Arg Arg Arg Arg
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Asn Asn Asn Asn Asn	Ser Ser Ser
Tyr Tyr Tyr Tyr	S S O E L S O	Ser Ser Ser Ser 690
Trp Trp Trp Trp	Lys Lys Lys Lys Lys Lys	S O E L S O E
Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:	Human GPR56-1: Human GPR56-2: Human GPR56-3: Human GPR56-4: Murine GPR56:
	GPR56-1: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-2: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-3: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-4: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56: Trp Tyr Trp Ser Met Arg Phe Gln Ala Gly Gly Gly Pro Ser Pro 600	GPR56-1: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-3: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-4: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-4: Trp Tyr Trp Ser Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro GPR56-1: Trp Tyr Trp Ser Met Arg Phe Gln Ala Gln Gly Gly Pro Ser Pro 660 GPR56-1: Lys Ser Asn Ser Asp Cys Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56-2: Lys Ser Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56-4: Lys Ser Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56-4: Lys Ser Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56-4: Lys Ser Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56-1: Lys Asn Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56: Lys Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56: Lys Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser GPR56: Lys Asn Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser

FIGURE 1k

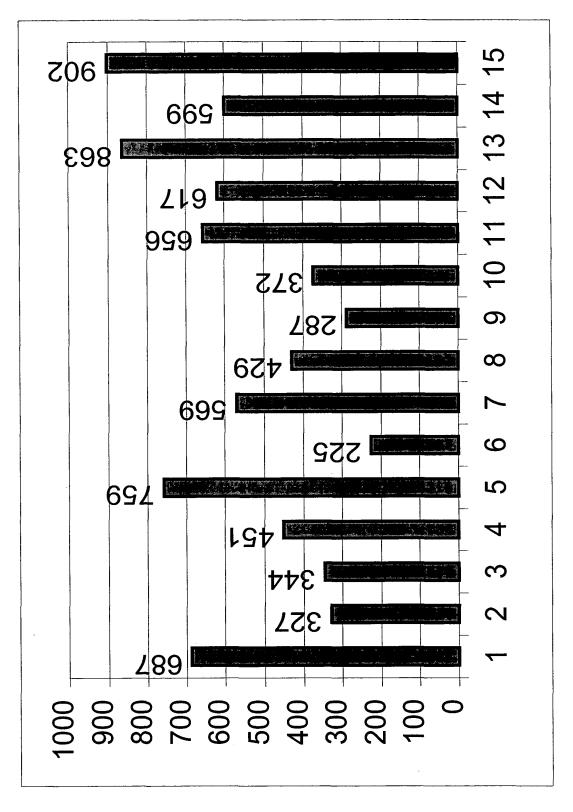
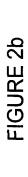
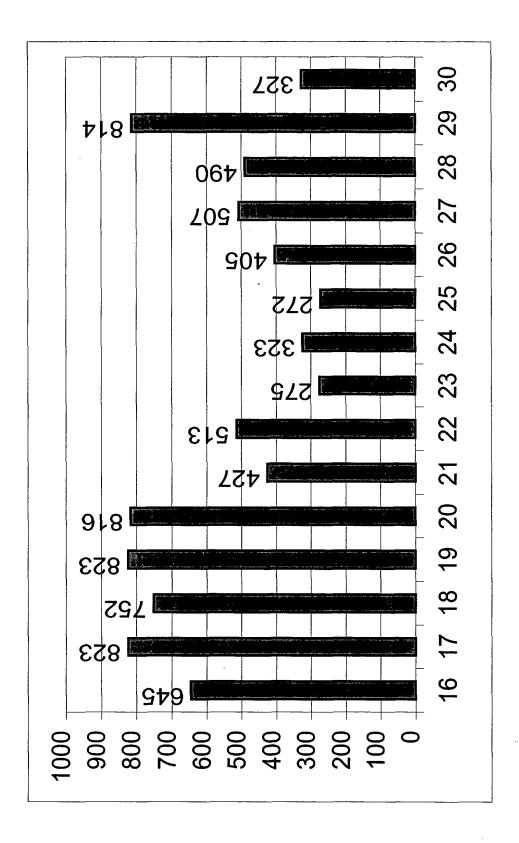


FIGURE 2a





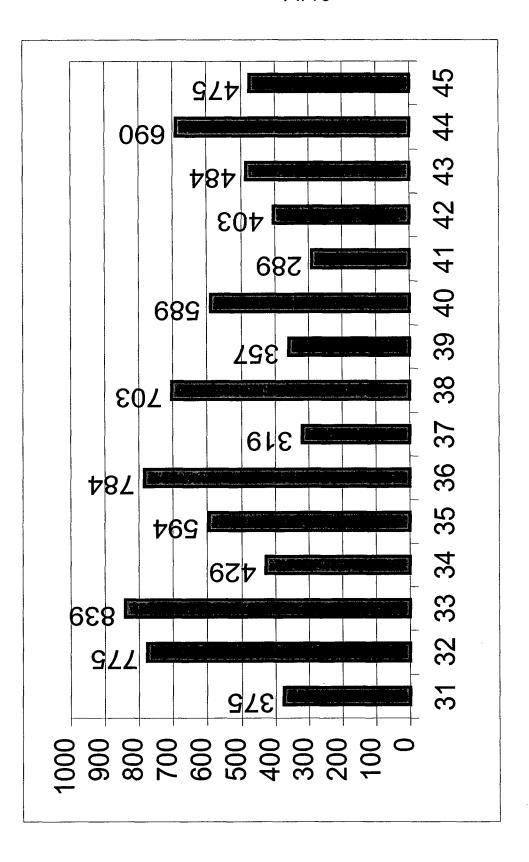


FIGURE 2c

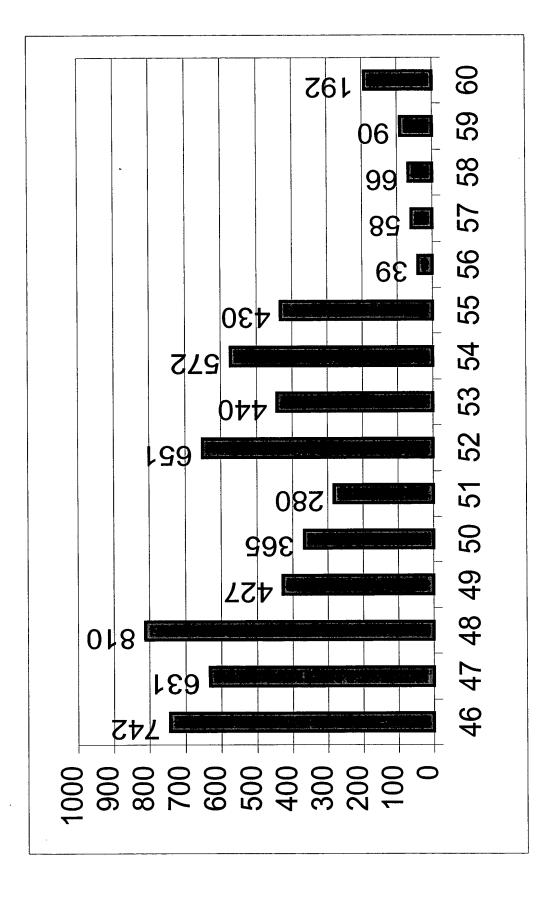


FIGURE 2d